BEFORE THE
FEDERAL COMMUNCIATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	WC Docket No. 04-36
IP-Enabled Services	)	

COMMENTS OF VONAGE HOLDINGS CORP.

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EXECUTIVE SUMMARY

The goals of the Telecommunications Act of 1996 were to deregulate and to open the market to competition. Accordingly, regulation is appropriate when it is narrowly crafted to achieve a relevant public policy goal. This is particularly important today as convergence is becoming the norm. The Commission should, therefore, adopt a layered approach to determine whether to regulate IP-enabled services. A layered approach will allow the Commission to apply different regulation to different layers and ensure "net neutrality." Vonage suggests the Commission consider four separate layers – content, applications, logical network, and physical network – in applying this paradigm to IP-enabled services.

The Commission should also declare that IP-enabled services are jurisdictionally interstate and subject to exclusive federal jurisdiction. Most IP-enabled services are inherently interstate because of the global nature of the Internet and the portability of the services. In addition, most IP-enabled service providers cannot separate intrastate from interstate traffic, rendering irrelevant the "end-to-end" analysis used by the Commission to jurisdictionally separate traffic. Due to the inherent interstate nature, coupled with the inseverability of IP-enabled services into intra- and interstate components, state regulation would be presumptively invalid under the Commerce Clause. However, states will still retain a vital role because the Commission could delegate certain functions to state commissions to administer the national regulatory framework.

The Commission should classify VoIP services, and most other IP-PSTN applications, as information services based upon the Act and Commission precedent. For instance, Vonage's service is an information service because it performs "net protocol conversion" and because it accesses and processes stored information, which are characteristics of information services. Thus, as an information service, the Commission should only subject these IP-enabled services

to the regulations necessary to protect social goals, but should also recognize that keeping the Internet free from regulation is another important public policy goal. The Commission has not provided justification, nor can it, act in conflict with its long-standing precedent to regulate information services differently from telecommunications services. Moreover, many IP-enabled services, like VoIP, are in their infancy where premature regulation will inhibit their growth and threaten their ability to become a potential competitor to traditional providers.

Competitive market demands for certain services, such as 911/E911 services, may abrogate the need for Commission regulation. However, to the extent regulation is necessary, the Commission has the primary obligation for 911/E911 regulation. The Commission should develop a phased approach similar to wireless E911 for IP-enabled services in order to provide time and flexibility because of technical and legal limits. Further, the Commission must recognize that the limits of the existing 911/E911 system are an industry-wide problem.

Regarding the application of the intercarrier compensation system to VoIP services, Vonage recommends that the Commission reform the system before considering whether to apply it. The current system applies compensation requirements differently depending on the type of carrier and the characterization of traffic.

Finally, non-facilities-based VoIP providers do contribute to the Universal Service Fund indirectly. VoIP products and services are assessed a USF fee when telecommunications carriers pass-through the USF amount. Thus, the Commission should concentrate on how VoIP providers are required to contribute.

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I. INTRODUCTION

Vonage Holdings Corp. ("Vonage"), by undersigned counsel, hereby submits these comments in the above-referenced proceeding. Vonage commends the Federal Communications Commission ("Commission") for opening this broad rulemaking proceeding to determine the appropriate regulatory framework for Internet-Protocol-enabled ("IP-enabled") services, including Voice over Internet Protocol ("VoIP"). IP-enabled services promise to change the communications marketplace and empower individual users with features that have been historically available only to large business users.

Vonage provides an Internet application that allows its customers to communicate in real time with each other and the service is backwards compatible with the Public Switched Telephone Network ("PSTN"). Customers must use specialized customer premise equipment in order to utilize the service and the Company's service is only available to those that have a pre-existing, third-party provided, broadband Internet access connection. Users of Vonage's service are able to leverage the power of the Internet in multiple ways including: a function that allows customers to receive their voicemails *via* e-mail to an Internet enabled device of their choice; the ability to utilize their device at any location that has a high-speed Internet connection; and the

ability to manage their account through the World Wide Web.[1] Future versions of Vonage's software will allow users to utilize Wi-Fi handsets and enable customers to access the service wherever there is a "hot spot" anywhere in the world.

Vonage urges the Commission to proceed cautiously in developing a regulatory framework for IP-enabled services. As Chairman Powell stated, it is vitally important that regulators not "dumb down the genius of the web to match the limited vision of a regulator."[2] The Commission must identify the goals it hopes to achieve in regulating VoIP service and then adopt narrowly tailored regulations to realize those objectives in the most unobtrusive manner as possible. Importantly, the Commission should wait to see if the industry and the marketplace are able to realize important social policy goals prior to attempting to compel their attainment through regulation.

It is critical that IP-enabled services continue to grow and attract users in order to spur the deployment of broadband facilities and networks. On a global level, broadband deployment is still in its infancy but is growing at an impressive pace. At the start of 2003, there were 63 million broadband subscribers worldwide which represents a 73 percent increase from 2002; however, these numbers still pale in comparison to the 1.13 billion fixed-line users and the 1.16 billion mobile phone users.[3] Further analysis of the broadband penetration rates show that the United States is lagging behind the rest of world. Korea, Hong Kong and Canada top the list

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[1] *See Vonage Holdings Corporation's Petition for Declaratory Ruling*, Docket 03-211 (filed Sept. 22, 2003) ("*Vonage Petition*").

[2] *IP-Enabled Services Notice of Proposed Rulemaking*, Statement of Michael K. Powell, Docket No. 04-36, 2004 WL 439260 (rel. Mar. 10, 2004) ("*IP-Enabled NPRM*").

[3] *Birth of Broadband*, ITU Internet Reports 2 (Sept. 2003) ("ITU Report"). The term "broadband" is defined in the ITU Report as "transmission capacity with sufficient bandwidth to permit combined provision of voice, data and video with no lower limit. Effectively, broadband is implemented mainly through ADSL, cable modem or Wireless LAN . . . services." *See id* Glossary.

with 21.28, 14.90 and 11.19 subscribers per 100 people, respectively.[4] The United States ranks 11th with 6.89 broadband subscribers per 100 people.[5] As Commissioner Copps recently stated "[i]t should also be of concern that consumers in other lands are getting a lot more capacity to a lot more people at a lot more lower cost that we are. . . [t]he USA—Number 11! What more of a wake-up call do we require?"[6]

Until there is significant improvement in the broadband adoption rates throughout the United States, broadband-based applications like VoIP will be limited in the amount of effective competition they can introduce into the telecommunications marketplace. Inappropriate regulation at the federal and/or state level will act as an impediment to the continued innovation of IP-enabled services and the development of "killer applications" that will entice subscribers who currently have access to broadband Internet access facilities but do not see the benefit in purchasing such services.[7]

Recent market analysis prepared by investment bankers suggests that light regulation of IP-enabled services is already increasing broadband penetration rates. In 2003, broadband penetration rates in the United States increased 5.7%.[8] According to one investment firm "VoIP will add fuel to the broadband fire, helping to drive [broadband] penetration over time."[9] The

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[4] *See id*., Table A-12.

[5] *Id*.

[6] Commissioner Michael J. Copps, Remarks at the *Quello Center Symposium*, (Feb. 25, 2004), *available at* http://ftp.fcc.gov/commissioners/copps/speeches2004.html (visited May 25, 2004).

[7] Matt Richtel, *In a Fast-Moving Web World, Some Prefer the Dial-Up Lane*, N.Y. TIMES, April 19, 2004, at A1.

[8] Merrill Lynch, *Everything Over IP: VoIP—and Beyond*, at 1 (March 12, 2004).

[9] *Id.*

report expresses concern, however, that state regulation, potentially creating inconsistent rules or a protracted period of uncertainty, could impede broadband penetration.[10]

The deployment of ubiquitous broadband facilities and stimulating demand for Internet based applications is important to our Nation. President Bush has identified the deployment of affordable broadband access services as a national priority.[11] IP-enabled applications like VoIP play a central role in promoting the deployment and adoption of broadband Internet access services. The symbiotic relationship between IP-enabled services and broadband deployment and adoption rates was recently affirmed by Chairman Powell: "[j]ust as email and e-commerce were drivers of narrowband Internet, higher bandwidth applications like streaming video and music entertainment, home networking and Internet voice will be the "killer apps" for broadband."[12] Accordingly, the Commission must act in a manner that promotes the continued deployment of innovative IP-enabled services.

II. THE COMMISSION SHOULD ADOPT A "LAYERED" APPROACH IN DETERMINING WHETHER TO REGULATE IP-ENABLED SERVICES[13]

The Commission seeks comment on whether there is any useful way to divide IP-enabled services into discrete categories, and, if so, how the Commission should define the relevant categories.[14] The Commission recognizes that there are a variety of methodologies to categorize

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[10] *Id.* at 2.

[11] Mike Allen, *Bush Sets Internet Access Goal*, THE WASHINGTON POST, March 27, 2004, at A4. *See also*, Memorandum from President George W. Bush on Broadband Rights-of-Way (April 26, 2004) *available at* http://www.whitehouse.gov/news/releases/2004/04/20040426-2.html (visited May 26, 2004).

[12] Written Statement of Michael K. Powell, Chairman, Federal Communications Commission, Before the Committee on Commerce, Science and Transportation, United States Senate (Feb. 24, 2004) *available at* http://ftp.fcc.gov/commissioners/powell/mkp_statements_2004.html (visited May 25, 2004).

[13] *IP-Enabled NPRM*, ¶¶ 35-37.

[14] *Id.* ¶ 35.

IP-enabled services, including: functional equivalency, substitutability, interconnection with the PSTN, peer-to-peer communications, a layered approach, and other frameworks.[15] Additionally, the Commission requests comments that recommend ways to distinguish regulations designed to respond to the dominance of centralized, monopoly-owned networks from those designed to protect public safety and other important consumer interests.[16]

In examining what regulatory framework to apply to IP-enabled services like VoIP, the Commission must return to first principles. Regulators must first apply the statutory framework established by Congress to determine if a particular IP-enabled service is a telecommunications service subject to Title II regulation or an information service subject to Title I jurisdiction. Regulators must next identify the public policy that would be promoted by subjecting certain IP-enabled services to regulation, while leaving others unregulated. Vonage respectfully submits that the fact that a particular IP-enabled service, like VoIP, enables the real-time transmission of audio signals over the Internet is not, by itself, enough to classify it as a telecommunications service or to justify regulation.

The Commission must first apply the definitions adopted by Congress and, if those definitions are no longer relevant, it must recommend changes for Congress to consider. Once it applies those definitions, the Commission can determine the appropriate regulatory framework based on the 1996 Act's twin goals of deregulation and opening all communications markets to competition. Market forces allowed to operate freely distribute goods and services in a far more effective and efficient manner than government intervention. As Chairman Powell recognizes "[c]ompetitive market forces, rather than prescriptive rules, will respond to public need much

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[15] *Id.* ¶ 37.

[16] *Id.* ¶ 36.

more quickly and more effectively than even the best intentioned responses of government regulators."[17] Regulation is appropriate to regulate markets that are distorted either because certain market players are able to exert power over the marketplace such that competition is no longer the governing force, or to protect externalities, such as social goods, that the marketplace may not deliver if left to its own devices. Accordingly, Vonage believes that any regulatory rubric that does not factor in the economic structure of a particular market will distort rather than enhance its operation. For this reason, the "layered" approach to regulation is superior to all other methodologies.

To be sure, there are many important social policy objectives that should be preserved. Although Vonage maintains that at this point in the development of VoIP services there are few areas in need of regulation, if regulatory intervention is determined necessary, the Commission should proceed, in the words of Commissioner Martin, with a "light regulatory touch."[18] It is not necessary to apply traditional common carrier regulation to IP-enabled services in order to achieve social goods. Regulations should be narrowly crafted to achieve the relevant public policy goal with primary emphasis placed on free market forces to discipline market participants.

It is also much more practical to adopt a layered approach when considering the appropriate regulatory framework for IP-enabled services. IP-enabled applications and the networks used to deliver them are developing at a dizzying pace. Any attempt by the Commission to classify and regulate each set of applications that meet certain criteria is doomed to failure both because of the time it takes for any regulatory body to make factually-intensive decisions and because of the ability of network and software designers to create new

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[17] *IP-Enabled NPRM*, Statement of Chairman Powell.

[18] *Id.*, Statement of Commissioner Martin.

architectures and applications that take advantage of the "old" rules. Based on the inefficiency and irrationality of other potential regulatory frameworks, coupled with the inability of regulators to timely and successfully classify IP-enabled applications, Vonage recommends that the Commission adopt a layered approach to regulating IP-enabled services.[19]

The layered approach to regulation is based on traditional communications policy where there were horizontal divisions between categories. Title I of the Communications Act 1934 ("1934 Act") began with a broad jurisdictional grant of authority to the Commission and then defined two separate categories of regulated services: Title II common carriers and Title III users of radio spectrum. When a particular service did not meet the existing categories, like cable television where wired and broadcast elements were combined, Congress and the Commission established a new horizontal category with new rules (Title VI).

The dawn of the Internet age has challenged traditional regulatory models as any network can be used to deliver a plethora of services. For example, coaxial cable can be used to deliver video, sound, broadcast, file-sharing applications, e-mail, and other services and applications, as can the Public Switched Telephone Network ("PSTN"), or satellite spectrum. Increasingly, any and all applications can run on any and all of these physical mediums. As such, the horizontal approach to regulation is doomed to fail in a marketplace where the Internet and broadband make convergence not only possible, but increasingly, the norm. Rather than try to regulate based on the application or the physical medium the application was traditionally associated with, the Commission should instead adopt a layers-based approach.[20]

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[19] *Id.* ¶ 37.

[20] Richard S. Whitt, *Adapting FCC Policymaking to the Network Layers Model: A Roadmap for FCC Action*, MCI Public Policy Paper, Docket Nos. 04-36, 02-33, 01-337, 01-92, 96-45, at 1-5 (filed Mar. 29, 2004).

The Commission first implemented a layers-based approach to regulation in *Computer II*.[21] Aside from distinguishing between basic and enhanced services,[22] the Commission required carriers that had control over underlying communications facilities and services to unbundle and provide the basic transmission service to all Enhanced Service Providers on a nondiscriminatory basis. The non-discriminatory access to underlying communications facilities is widely credited with establishing the preconditions for the Internet as we know it today.[23]

The layered approach to regulation has been discussed and developed by many different parties and there is detailed analysis available to the Commission from a variety of sources.[24] Vonage will not repeat the lengthy examination of the layered approach in these comments. Instead, Vonage agrees with a number of parties that the Commission should adopt a layered approach to regulation that recognizes four layers: (i) content (the actual information transmitted

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[21] *Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry)*, Docket No. 20828, Final Decision, 77 F.C.C.2d 384 (1980) ("*Computer II*"), subsequent history omitted.

[22] *See infra* Section IV.

[23] *See, e.g.*, Richard S. Whitt, *A Horizontal Leap Forward: Formulating a New Public Policy Framework Based on the Network Layers Model*, at 5 (March 2004) ("*Horizontal Leap*") *available at* http://global.mci.com/about/publicpolicy/presentations/horizontallayerswhitepaper.pdf (visited May 25, 2004); Robert Cannon, *The Legacy of the Federal Communications Commission's Computer Inquiries*, 55 FED. COMM. L.J. 167 (2003); Phillip J. Weiser, *Law and Information Platoforms*, 1 J. ON TELECOM. & HIGH TECH. L. 1 (2002).

[24] *See e.g.*, *Implications of Technological Change*, Kevin Werbach, A *Layered Model for Internet Policy*, 1 J. ON TELECOMM. & HIGH TECH. L. 37 (2002); Douglas C. Sicker, *Further Defining a Layered Model for Telecommunications Policy*, Telecommunications Policy Research Conference (TPRC) Paper (2002), *available at* http://intel.si.umich.edu/tprc/papers/2002/95/LayeredTelecomPolicy.pdf (visited May 25, 2004); Rob Frieden, *Adjusting the Horizontal and Vertical in Telecommunications Regulation: A Comparison of the Traditional and a New Layered Approach*, 55 FED. COMM. L.J. 207 (2003); Robert M. Entman, *Transition to an IP Environment: A Report of the Fifteenth Annual Aspen Institute Conference on Telecommunications Policy* (2001), *available at* http://www.aspeninstitute.org/aspeninstitute/files/Img/pdf/transition_bk.pdf (visited May 25, 2004); Lawrence B. Solum and Minn Chung, *The Layers Principle: Internet Architecture and the Law* (University of San Diego School of Law, Public Law and Legal Theory Research Paper No. 55) (2003), *available at* http://ssrn.com/abstract=416263 (visited May 25, 2004); Robert Cannon, *The Legacy of the Federal Communications Commission's Computer Inquiries*, 55 FED. COMM. L.J. 167 (2003); Craig McTaggert, *A Layered Approach to Internet Legal Analysis* (2002), available at http://www.innovationlaw.org/cm/ilg2002/reading/layered1.pdf (visited May 25, 2004).

like voice or writings); (ii) applications (the nature of the service provided like video or voice); (iii) logical network (Internet protocol, special access, DSL, etc.), and; (iv) physical network (copper, fiber, coaxial, etc.).[25]

By adopting a layered approach to regulation, the Commission can specifically target different types of regulation to distinct layers. For example, economic regulations should be targeted at layers that are subject to control by firms with market dominance. In the current marketplace, the logical and physical networks are controlled by a few firms that provide last mile connectivity. The Commission therefore should narrowly tailor regulations that prohibit such firms from using their control over bottleneck facilities to engage in unfair practices in order to obtain market share in content and application layers.

In these initial comments, Vonage offers one example of an important regulatory principle to apply to the logical and physical layer of IP-enabled communications. That principle is "Net Neutrality." The importance of the issue to Vonage is obvious. Vonage's business is premised on the openness – the "neutrality" – of the Internet. Indeed, Vonage's service relies on the broadband network connections provided by the companies that should be its biggest competitors – the cable modem and DSL services offered by the cable and telephone monopolies. But in the open, modular world that is today's Internet, that should not be a concern. As long as consumers can use their broadband Internet connections to access any application they choose, at a reasonable speed and at a reasonable latency threshold, Vonage can compete with its cable/telco competitors.

Vonage is a believer in free markets, and does not advocate premature, unnecessary government intervention in any aspect of the Internet economy. Indeed, Section 230 places a

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[25] *See, e.g.*, *Horizontal Leap*, *supra* note 23, at 23-24.

significant burden on all government regulators to justify intervention in the workings of the Internet. But as Chairman Powell and Commissioner Copps have remarked in recent months, the Commission must keep itself apprised of developments that could threaten the continued openness of the 'Net.[26]

Although Vonage anticipated that cable and DSL would one day be its main competition, it also assumed that competition would occur in the traditional context of the Internet, in which all application providers have the same rights and access to the essential transport layer of the network. That essential framework – at least the intellectual basis for it – has been under attack. For example, the Chief of the Media Bureau (albeit speaking for himself) has questioned the Commission's jurisdiction over assuring Internet openness, and suggested that exclusive arrangements between network and content providers "will be a key to success in the virtual world."[27] A recent Cato Institute report also questions the wisdom of official "Net Neutrality" initiatives.[28] Finally, a recent analyst's report suggests that "broadband network operators could slow down Vonage's service, [and] … give network precedence to their own revenue generating services."[29] And though the report concedes that the de-prioritization of Vonage's traffic "may seem like a dodgy competitive tactic," it suggests that "[u]nless Vonage pays fees to the network

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[26] Chairman Michael K. Powell, Remarks at the *Silicon Flatirons Symposium*, "The Digital Broadband Migration: Toward a Regulatory Regime for the Internet Age" (Feb. 8, 2004) *available at* http://ftp.fcc.gov/commissioners/powell/mkp_speeches_2004.html (visited May 25, 2004); Commissioner Michael J. Copps, Remarks to the *New America Foundation*, "The Beginning of the End of the Internet? Discrimination, Closed Networks, and the Future of Cyberspace" (Oct. 9, 2003) *available at* http://ftp.fcc.gov/commissioners/copps/speeches2003.html (visited May 25, 2004).

[27] W. Kenneth Ferree, Remarks at *the Progress and Freedom Foundation Conference*, (June 27, 2002), *available at* http://www.causingeffect.com/library/2003nnconf/ (visited May 5, 2004).

[28] Adam D. Thierer, *"Net Neutrality" – Digital Discrimination or Regulatory Gamesmanship in Cyberspace?*, Cato Policy Analysis No. 507 (Jan. 12, 2004) *available at* http://www.cato.org/pubs/pas/pa-507es.html (visited May 25, 2004).

[29] Lindsay Schroth, *Why Vonage is Just a Fad*, *available at* http://www.yankeegroup.com/public/home/daily_viewpoint.jsp?ID=11499 (visited May 25, 2004).

provider, there is no reason the operator should not make the service a lower priority on the network."[30]

This report about how networks can be manipulated to discriminate against Vonage is no mere speculation. For example, in recent months, a Washington State ISP cancelled the service of a Vonage customer because the ISP claimed it did not have a contract with Vonage. Similarly, at a recent VoIP forum in Utah, an independent rural ILEC stated that it was capable of introducing latency into Vonage packets and there was nothing to stop it from doing so. Similar concerns were heard four years ago as part of the "open access" debate that arose when AT&T acquired the TCI and MediaOne properties. The ability of facilities-based broadband ISPs to control traffic flows was discussed at length in those proceedings,[31] and one of the reasons the FCC approved those deals was because of AT&T's pledge that it would maintain the openness of the network.[32]

The view that network operators have the right to control the network to their benefit is, of course, antithetical to the historical development of the Internet, as that development was overseen by DARPA and the NSF until just 10 years ago. As Joseph Farrell and Phillip Weiser explain, "[t]his architecture reflects a conscious strategy by the Internet pioneers that the platform should not anticipate what applications would rely on it, and no central gatekeeper should decide which applications could be provided."[33]

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[30] *Id.*

[31] *See e.g., Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations from MediaOne Group, Inc., Transferor, to AT&T Corp., Transferee*, 15 FCC Rcd 9816, ¶¶ 106-15 (2000).

[32] *Id.* ¶¶ 120-21.

[33] Farrell & Weiser, *Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age*, Competition and Policy Center, at 6 (2003) *available at* http://repositories.cdlib.org/iber/cpc/CPC02-035 (visited May 25, 2004).

Many suggest that market forces will keep the Internet "open" because consumers will reject network platforms that deprive them of full network access. Although Vonage recognizes that network externalities work in its favor, such forces can only operate in competitive markets. A broadband duopoly is not equivalent to a competitive marketplace. Vonage, therefore, does not believe that the Commission can afford to be as nonchalant as its Media Bureau Chief has suggested.

Moreover, assuring net neutrality is most certainly the Commission's business, if not its obligation. While Vonage recognizes that the Commission may still appeal the Brand X decision,[34] the Commission should ask itself if the paradigm suggested by the court is not in accord with most consumers' use of broadband services. In Vonage's experience, broadband service is used largely as a means to obtain access to and content from unaffiliated web sites, and consumers tend to make little (or no) use of the other services and content provided by their ISPs. Thus, broadband service is used largely as a "fast pipe," and the Commission may need to adjust its regulatory regime to recognize that fact.[35] The Commission's role is clear. While some consumers can choose between cable or DSL, many, if not most, cannot. By contrast, consumers can switch dial-up ISPs at the drop of a hat. The concern that transport providers with market power would use that power to the detriment of unaffiliated information service providers who rely on unfettered access to transport was the rationale behind the FCC's creation of the basic/advanced services dichotomy. Those policy considerations are still relevant today.

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[34] *Brand X Internet Services v. FCC*, 345 F.3d 1120 (9th Cir. 2003).

[35] Whether a service qualifies as common carriage, of course, depends both on the nature of the service and consumer expectations of that service. *See National Ass'n of Regulatory Utility Commissioners et al. v. Federal Communications Comm'n*, 525 F.2d 630 (D.C. Cir. 1976); *National Ass'n of Regulatory Utility Commissioners v. Federal Communications Comm'n*, 533 F.2d 601 (D.C. Cir. 1976). These comments are not intended to address that issue.

Vonage was heartened by Chairman Powell's recent "Internet Freedom" speech to the Silicon Flatirons Symposium, and agrees with the key principals articulated therein.[36] For the Internet to thrive and continue to be the driver of growth and efficiency that it has been in recent years, consumers must be free to access content, use applications, and attach personal devices (such as gaming equipment, home networking routers and VoIP devices) to their broadband modems.

Net neutrality can be assured either by adopting subjective or objective standards. An example of an objective standard would be to require that broadband providers guarantee a certain percentage of available bandwidth, or certain fixed amounts of bandwidth speed, on an unfettered basis to their end-users, or a latency threshold, or some combination of all of these metrics. For example, where the slowest DSL modems deliver 700-800 kilo-bytes-per-second of bandwidth, providers would be required to guarantee their 512 kbps (for example) of bandwidth for end-users to access the Internet applications of their choice, without interference from the broadband provider. Providers could restrict usage that exceeded maximum guaranteed levels.

As an alternative to objective standards, subjective net neutrality standards could be adopted that would mirror the anti-discrimination requirements of section 202. Broadband providers would be required to provide all their customers with the same usage and access rights, whether the customer used applications offered by the broadband provider or not. Vonage urges the Commission to be mindful of net neutrality and pro-active in gathering information about any abuses, even though immediate action may not be necessary.

[36] Chairman Michael K. Powell, Remarks at the *Silicon Flatirons Symposium*, *supra* note 26.

III. IP-ENABLED SERVICES LIKE VONAGE'S ARE JURISDICTIONALLY INTERSTATE AND SHOULD BE SUBJECT TO EXCLUSIVE FEDERAL JURISDICTION[37]

The Commission is seeking comment on the jurisdictional nature of IP-enabled services.[38] Congress's clear intention is that such services remain "unfettered" by federal or state regulation.[39] As the Commission notes, courts have recognized the preeminence of federal authority in the area of information services, particularly in the area of the Internet and other interactive computer services.[40] Commissioner Abernathy observes that "most forms of IP communications appear to transcend jurisdictional boundaries, rendering obsolete the traditional separation of services into interstate and intrastate buckets."[41] Notwithstanding this fact, a number of state commissions are refusing to defer to this Commission's rulemaking and are instead taking aggressive action to subject IP-enabled service providers to state common carrier regulation. While these actions are often taken under this guise of protecting consumers, it is clear that one of the primary motivations behind the assertion of state jurisdiction is to preserve the advantages, and revenues, of monopoly incumbent local exchange carriers. The Commission needs to declare that IP-enabled services are interstate and subject to its jurisdiction before the states create a patchwork of conflicting common carrier regulation that stifles nascent IP-enabled services.

The Commission recently determined that because Pulver's Free World Dialup ("FWD") service is a completely portable Internet service, and for other reasons, the Commission's

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[37] *IP-Enabled NPRM*, ¶¶ 38-41.

[38] *Id.*

[39] 47 U.S.C. § 230(b)(2).

[40] *IP-Enabled NPRM*, ¶ 41.

[41] *Id.*, Statement of Commissioner Abernathy.

traditional "end-to-end" jurisdictional analysis was inappropriate. Additionally, the Commission determined that even if the "end-to-end" analysis was applied to FWD, the Commission would find that it was an interstate service based on the agency's "mixed use" doctrine.[42] The Commission is seeking comment on whether it should extend the findings made in *Pulver* to other IP-enabled services. As explained below, it should. The Commission requests comment on the relevance of the end-to-end analysis to other IP-enabled services. As further explained below, the end-to-end analysis has no relevance to most IP-enabled services. The Commission also seeks comment on whether the "mixed use" doctrine should be applied to other IP-enabled services to the extent that the Commission chooses to retain the end-to-end analysis.[43] Vonage agrees that if there is any remaining relevance to the end-to-end doctrine in the world of IP-enabled communications, under the mixed use doctrine, IP-enabled services are appropriately classified as interstate.

The Commission also seeks comment on whether, and on what grounds, different classes of IP-enabled services should be deemed subject to exclusive federal jurisdiction in regard to traditional common carrier regulation. As explained by the Commission, the Constitution's Commerce Clause prohibits state regulation where such regulation would burden the free flow of commerce across state lines. Accordingly, the Commission seeks comment on whether the Commerce Clause is relevant to determining the extent of federal jurisdiction over IP-enabled services.[44] Vonage maintains that due to the inherent interstate and global nature of the Internet, state regulation is presumptively invalid under the Commerce Clause. This is not to say that

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[42] *Id.* ¶ 39.

[43] *Id.* ¶ 40.

[44] *Id.* ¶ 41.

there is no role for states in the federal framework that will govern IP-enabled services. States will retain a vital role, so long as that role does not conflict with or undermine federal policy.

A. Most IP-enabled Services Are Inherently Interstate

There are many IP-enabled services that resemble Pulver's service, including Vonage's service. Vonage's service is clearly interstate in nature. Similar to FWD,[45] Vonage customers can only access the service over broadband Internet connections provided by third parties, such as that provided by DSL and cable modem service providers.[46] Further, once a Vonage customer signs up for service, the number utilized by the Vonage customer is "completely portable to any broadband-accessible location to which that member may go."[47] Accordingly, this characteristic of Vonage's service is identical to FWD in that with Vonage's service, the Company "depends on whether a user can establish a presence on the network at some point, not whether the user can access the network from a specific geographically defined end point."[48] Vonage believes that most IP-PSTN communications share these characteristics.

Just like FWD, the geographic origination or termination of the IP portion of an IP-PSTN communication is unknown. The IP end of an IP-PSTN communication translates the PSTN telephone number into an IP address. There is no means to identify the location of the IP address as the communication protocols utilized to transmit data over the Internet do not contain such

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[45] *Id.*, ¶ 38 (stating that FWD members must "bring their own broadband"); *see also, Petition for Declaratory Ruling that Pulver.Com's Free World Dialup is Neither Telecommunications nor a Telecommunications Service*, 19 FCC Rcd 3307, ¶ 5 (2004) ("*Pulver Order*") (noting that FWD members must have an existing broadband Internet access connection since Pulver does not offer any transmission service or transmission capability).

[46] *Vonage Petition*, *supra* note 1, at 4.

[47] *Pulver Order*, ¶ 5. *See Vonage Petition*, at 4, 28.

[48] *Id.* ¶ 4; *see also, Vonage Petition*, at 28.

information.[49] Even if the IP address is mapped to a certain device, in many cases the device is portable so its location is unknown. VoIP also allows end users to exert greater control over their communications services. End users of some VoIP services may change the destination of the IP address to another device or location without the knowledge of the service provider. Further, future versions of Vonage's Internet application will allow users to make use of Wi-Fi networks. When this software is complete, a Vonage customer equipped with the appropriate hardware (*i.e.*, a Wi-Fi enabled phone) will be able to place and to receive calls while making use of "hot spots" in airports, hotels and restaurants. Thus, as is the case for IP-IP communications, for IP-PSTN communications, the IP end point is unknown and irrelevant.

Both Congress and the Commission have recognized that the Internet is inherently interstate and that applications, such as Vonage's service, that use the Internet are interstate services as well. Indeed, the Act itself refers to the Internet as jurisdictionally interstate.[50] Consistent with §230, the Commission has consistently found that applications provided over the Internet are interstate in nature. For example, the Commission has observed that IP relay services are inherently interstate because the first leg of an IP Relay call comes over the Internet.[51] Accordingly, the Commission permitted the full recovery of IP Relay costs from

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[49] On traditional telephone networks, it is usually possible to determine the jurisdiction of traffic on a call-by-call basis, because the carrier provides a physical connection to the end user, and therefore can determine where that user is located. The same is not true of Internet traffic. The Internet has no system for determining the geographic location of users.

[50] *See* 47 U.S.C. §230(f)(1) (defining the "Internet" as the "international computer network of both Federal and non-Federal interoperable packet switched data networks"); *see also Reno v. ACLU*, 521 U.S. 844, 849-850 (describing the Internet as "an international network of interconnected computers").

[51] *Provision of Improved Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, 17 FCC Rcd 7779, ¶¶ 1, 15 (2002) ("*IP-Relay Order*").

interstate funds. Because Vonage services are transmitted over the Internet there can be no question that they are jurisdictionally interstate.[52]

B. Most IP-enabled Services Are Interstate Service Under the "Mixed Use" Doctrine

The 1934 Act establishes "a system of dual state and federal regulation over telephone service."[53] Although states retain authority over certain purely intrastate matters, "questions concerning … interstate communications service are to be governed solely by federal law and … the states are precluded from acting in this area."[54] As the Supreme Court explained in *Louisiana*, preemption occurs "where compliance with both federal and state law is in effect physically impossible …."[55] This "inseverability" or "mixed use" doctrine applies to Vonage's services because there is no technical means by which Vonage could reliably separate intrastate from interstate traffic completed for its customers.

Vonage clearly provides an inseverably mixed interstate/intrastate service, the provision of which would be rendered impossible by disparate state regulations. The nature of Vonage's service makes it impossible to divide the service into distinct intrastate and interstate components due the inherently portable nature of the service.

This "inseverability" doctrine applies to Vonage's services because there is no technical means by which Vonage could reliably separate intrastate from interstate traffic completed for its customers. For example, Vonage cannot comply with state regulations that target solely intrastate activities. A good example of the problems faced by the Company is illustrated by the

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[52] While there are differences between FWD and VoIP services that interconnect with the PSTN like Vonage's, the limitations of the "end-to-end analysis" identified by the Commission in *Pulver* are identical for the portion of a VoIP service that either originates or terminates on the Internet.

[53] *See Louisiana Pub. Serv. Comm'n v. FCC*, 476 U.S. 355, 360 (1986).

[54] *See Ivy Broadcasting Co. v. Am. Tel. & Tel. Co.*, 391 F.2d 486, 491 (2d Cir. 1968).

[55] *See Louisiana,* 476 U.S. at 368.

Minnesota Public Utilities Commission's ("MN PUC") Order exerting jurisdiction over Vonage's service.[56]

The MN PUC issued an order requiring Vonage to comply with its state regulations that are applicable to telecommunications carriers. If Vonage chose instead not to enter the Minnesota marketplace, the Company would have to suspend nationwide operations because Vonage cannot isolate intrastate communications. Vonage could not simply block all transmissions originating from and terminating to telephone numbers with Minnesota area codes, because some Vonage customers located in Minnesota use non-Minnesota telephone numbers. Similarly, Vonage cannot assure compliance by preventing its customers with Minnesota mailing addresses from placing calls to or receiving calls from Minnesota telephone numbers, because this would not prevent customers from other states from using the service while visiting Minnesota. And, while neither restriction would prevent all intrastate calls, either one would block some interstate calls (by non-Minnesota customers with Minnesota telephone numbers, or by customers with Minnesota addresses who are traveling out of the state).

Similarly, Vonage is a customer of interstate communications carriers, whose services it procures for connections between its servers and users of the PSTN. The MN PUC Order overlooks – indeed, makes no acknowledgement of – the fact that all communications from Vonage customers that are terminated on the PSTN in Minnesota are handled by a long distance carrier that receives the call at a Vonage server out-of-state and pays interstate terminating access to the local exchange carrier pursuant to federal tariff to terminate the call in Minnesota. This hand-off occurs outside Minnesota, and is handled by an interexchange carrier subject to the

[56] *Complaint of the Minnesota Department of Commerce Against Vonage Holding Corp. Regarding Lack of Authority to Operate in Minnesota*, Order Finding Jurisdiction and Requiring Compliance, Docket No. P-6214/C-03-108 (issued Sept. 11, 2003) ("*MN PUC Order*").

exclusive jurisdiction of the Commission. Vonage's use of those services falls within the exclusive jurisdiction of the Commission, not the MN PUC.

Because Vonage cannot, as a practical matter, stop offering intrastate service in Minnesota without also affecting interstate services, the State may not regulate Vonage's service. The Commission has confronted this issue with respect to both telecommunications and information services, and has not hesitated to preempt State regulation where, as a practical matter, it is impossible to separate a jurisdictionally mixed service into interstate and intrastate components.[57] The inseverability doctrine mandates that the Commission assert jurisdiction over inseverable or mixed-use IP-enabled services such as Vonage's.

C. The Commerce Clause Preempts State Regulation of IP-Enabled Services Like Vonage's

The Commerce Clause of the United States Constitution[58] empowers Congress to regulate commerce among the states. It also confines the states' power to burden interstate commerce.[59] The "dormant" Commerce Clause operates in this latter capacity by denying "the States the power unjustifiably to discriminate against or burden the interstate flow of articles of commerce."[60]

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[57] *See, e.g., Promotion of Competitive Networks in Local Telecommunications Markets*, 15 FCC Rcd 22983, ¶ 107 (2000) ("[b]ecause fixed wireless antennas are used in interstate and foreign communications and their use in such communications is inseverable from their intrastate use, regulation of such antennas that is reasonably necessary to advance the purposes of the Act falls within the Commission's authority"); *Rules and Policies Regarding Calling Number Identification Service -- Caller ID*, 10 FCC Rcd 11700, ¶¶ 85-86 (1995) (California default line-blocking policy was preempted because it would preclude transmission of Caller ID numbers on interstate calls, and effect of the policy was inseverable).

[58] Art. I, § 8, cl. 3.

[59] *Oregon Waste Sys. v. Dep't of Envtl. Quality*, 511 U.S. 93, 98 (1994).

[60] *See id.*; *C & A Carbone, Inc. v. Town of Clarkstown*, 511 U.S. 383, 392 (1994).

Under the Commerce Clause, State regulation is per se invalid when it has an "extraterritorial reach," that is, when the statute has the practical effect of controlling conduct beyond the boundaries of the State.[61] The Dormant Commerce Clause also requires the striking of a State's law if the burden it imposes upon interstate commerce is "clearly excessive in relation to the putative local benefits."[62]

As explained *supra*,[63] Vonage's service, as recognized by the Act and by the Commission's precedent, is inherently an interstate service. State regulation of Vonage's service by definition would have an "extraterritorial reach" since Vonage neither knows the location of its users, nor does it have the means to determine their location.[64] Accordingly, if state regulation were permitted, the Company would be placed in the impossible position of complying with all state laws since its service can be used in any state at any particular moment. Thus, every state would have the ability to impact the use of the service by a Vonage customer that has no connection to that state.

A good example of the problems associated with state regulation of Vonage's service is demonstrated by the order issued by the Minnesota Public Utilities Commission ("MN PUC"). The MN PUC issued an order requiring Vonage to comply with its 911/E911 rules and regulations in order to offer service in that state.[65] As detailed in the *Vonage Petition*,[66] Vonage has no means to block users from using its service in the state of Minnesota. Briefly, since

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[61] *Healy v. Beer Inst., Inc.*, 491 U.S. 324, 336 (1989); *Cotto Waxo Co. v. Williams*, 46 F.3d 790, 793-95 (8th Cir. 1995).

[62] *Pike v. Bruce Church, Inc.*, 397 U.S. 137, 142 (1970); *R&M Oil & Supply Inc. v. Saunders*, 307 F.3d 731, 735 (8th Cir. 2002).

[63] *See supra* Sections III A, B.

[64] *See supra* Sections III A, B.

[65] *MN PUC Order*, *supra* note 56.

[66] *Vonage Petition*, *supra* note 1, at 29.

telephone numbers do not serve as a proxy for geographic location when using Vonage's service, simply preventing customers from obtaining Minnesota telephone numbers would not prohibit customers from using the service in Minnesota as Minnesotans could obtain non-geographically based telephone numbers (from the neighboring state of Wisconsin, for example) and still use Vonage's service within the state. Further, non-residents could travel to Minnesota with their Multimedia Terminal Adapter and use Vonage's service. Accordingly, if the United States District Court for Minnesota had not issued a permanent injunction,[67] Vonage would arguably have had to discontinue its service throughout the entire United States in order to comply with the MN PUC requirements.[68]

Because state common carrier regulation of jurisdictionally mixed or inseverable IP-enabled services burdens interstate commerce, state regulation is invalid under the Commerce Clause.

D. States Will Retain An Important Role with Respect to IP-Enabled Services

While jurisdictionally mixed or inseverable IP-enabled services should be subject to the Commission's exclusive jurisdiction with respect to common carrier regulation, states will retain an important role overseeing IP-enabled services. With respect to social policy goals, the Commission may determine that it is appropriate to delegate certain functions to state public utility commissions to administer the national regulatory framework, as it has done in the past. For example, the Commission delegates to state commissions the enforcement of certain

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[67] *Vonage Holdings Corp. v. Minnesota Public Utilities Commission*, 290 F.Supp.2d 993 (D. Minn. 2003).

[68] Similarly, the New York Public Service Commission has also released an order attempting to exercise jurisdiction over Vonage's service. *See Complaint of Frontier Telephone of Rochester, Inc. Against Vonage Holdings Corporation Concerning Provision of Local Exchange and Interexchange Telephone Service in New York in Violation of the Public Service Law*, Order Establishing Balanced Regulatory Framework for Vonage Holdings Corporation, Case 03-C-1285 (effective May 21, 2004).

customer premise equipment rules that apply to equipment provided to persons with hearing, speech, vision, and mobility disabilities.[69] Numerous states have adopted Internet-related privacy regulations[70] and literally dozens of states regulate e-mail in one form or another.[71] Further, state laws concerning consumer protection, including truth-in advertising and predatory business practices, are all enforced by state jurisdictions outside of traditional common carrier regulation. States have the ability to determine what state agency is responsible for enforcing these laws.

Moreover, states will retain jurisdiction to address traditional consumer protection issues as they apply to information services. For example, state attorneys general will retain authority to address consumer complaints and fraud. Under a federal framework, states will only lose the ability to impose common-carrier regulations on providers of IP-enabled services.

IV. VOIP SERVICES ARE PROPERLY CLASSIFIED AS "INFORMATION SERVICES" UNDER THE 1996 ACT AND BY COMMISSION PRECEDENT[72]

The Commission is seeking comment on the appropriate legal and regulatory framework for each specific class of IP-enabled service.[73] The Commission explains that the analysis of IP-enabled services begins with an examination of the statutory definitions of "telecommunications services" and "information services" as they apply to such services; however, the Commission states that it must consider the policy implications that flow from a particular statutory definition.

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[69] 47 C.F.R. § 64.608.

[70] *See, e.g.*, California (2003 A.B. 68, California Civil Code §§ 1798.29, 1798.82, Cal. Govt. Code § 11019.9); Nebraska (2003 L.B. 118); Minnesota (Minnesota Statutes §§ 325M.01 to .09); Nevada (Nevada Revised Statutes § 205.498); Delaware (Delaware Code § 19-7-705) Connecticut (General Statutes of Connecticut § 31-48d).

[71] S*ee* http://www.spamlaws.com/state/index.html (summarizing state laws) (visited May 25, 2004).

[72] *IP-Enabled NPRM*, ¶¶ 42-49.

[73] *Id.* ¶ 42.

The Commission maintains that it has been empowered by Congress to consider certain policy implications when crafting regulations that target the relevant features of VoIP and IP-enabled services. Specifically, among other social objectives, Congress has expressed its desire to preserve both universal service and prompt emergency service through the 911 system. Where the Act is silent concerning the appropriate regulatory treatment of a particular service, the Commission states that it can impose regulatory requirements under Title I of the Act. The Commission also indicates that it can amend or revoke its current rules and regulations when the underlying circumstances no longer apply. Accordingly, the Commission is seeking comment on the various features that characterize IP-enabled services and the interrelationship between those features, the statutory text, and the Commission's policy goals.[74]

A. Begin at the Beginning

While policy considerations may inform the regulatory framework the Commission imposes on IP-enabled services, such policy considerations may not excuse the Commission from first determining whether certain IP-enabled services qualify as information services or telecommunications services. As Vonage has explained in its *Petition*, Vonage's service qualifies as an information service. Vonage believes that most other IP-PSTN applications will also qualify as information services and that, on the application layer, such applications should generally be subject only to regulations that are necessary to protect social goods, such as access to emergency services and universal service, as addressed in more detail in Sections V and VII herein. Under the layered approach to regulation, the Commission may determine that the logical and physical network layers of IP-PSTN applications should nevertheless be subject to regulations that target firms with market dominance.

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[74] *Id.*

Vonage qualifies as an information service provider for two distinct reasons: first, it provides a protocol conversion service by facilitating communications between the IP format of the Internet and the TDM format of the PSTN. Indeed, distilled to its essence, Vonage's business *is* protocol conversion. Second, Vonage provides access to stored information in the same manner as other Internet services.

1. Vonage's Service Performs a Net Protocol Conversion.

Vonage receives a series of digitized IP packets from its customers. Vonage receives the call in one protocol and converts it to another. As the Commission found in the *Non-Accounting Safeguards Order*,[75] the statutory definition of information service "requires only that an information service transform or process 'information.'"[76] The Commission explained that content-neutral protocol processing is one of the classes of competitive application service providers that *Computer II* and the 1996 Act intended to shield from common carrier regulation. It therefore concluded that

> an end-to-end protocol conversion service that enables an end-user to send information into a network in one protocol and have it exit the network in a different protocol clearly "transforms" user information…[and is therefore] information services under the 1996 Act.[77]

This conclusion conformed to the Commission's pre-1996 Act determination that the net protocol test measured a net change "between the point where a customer's data enters the public switched network and the point where it leaves the network."[78] Vonage's service transforms the

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[75] *Implementation of the Non-Accounting Safeguards of Section 271 and 272 of the Communications Act, as Amended*, 11 FCC Rcd 21905 (1997) ("*Non-Accounting Safeguards Order*").

[76] *Non-Accounting Safeguards Order*, ¶ 104.

[77] *Id.*

[78] *Independent Data Communications Manufacturers Association, Inc.*, 10 FCC Rcd 13717, ¶ 10 (1995) ("*Frame Relay Order*"). The entry and exit point of wireline communications networks are defined as the demarcation point at a subscriber's premises; that is, the point of connection between the facilities of the service provider and the terminal equipment used by the customer. *See, e.g.*, 47 C.F.R.

format of information between the point at which it is sent "into a network" and the point where it "exit[s] the network." One of those points is where a customer's computer equipment is connected to the Internet; the other is where a user's telephone equipment is connected to the PSTN. For calls originated by Vonage customers, Vonage receives data in IP format,[79] converts the transmission to TDM, and facilitates the call's delivery on the PSTN. Likewise, calls to Vonage customers "enter" the PSTN in TDM, are converted by Vonage to IP, and then delivered to Vonage's customer in that format – a net protocol conversion that is, inescapably, an information service. Thus, for the same reason that the protocol conversions performed by the services at issue in the 1985 *X.25 Conversion Order*[80] and the 1995 *Frame Relay Order*[81] were considered enhanced services, Vonage's protocol conversion qualifies as an information service.

2. Vonage's Service Accesses and Processes Stored Information.

In addition to "transforming" and "processing" information, Vonage's service includes a capability for "acquiring, storing, … processing, retrieving [and] utilizing … information via telecommunications,"[82] in a manner that the Commission has deemed characteristic of information services. For example, when an end-user on the PSTN places a call to a phone number assigned to a Vonage customer, Vonage not only converts the call content into the IP format for transmission on the Internet, but must also identify the IP address associated with the Vonage customer being called, and encode that information onto the Internet data stream. This address identification requires Vonage to access and process stored information.

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§ 69.2(cc) (a call "terminates" at the demarcation point); 47 C.F.R. § 68.3 (demarcation point is where the network terminates at a subscriber's premises).

[79] The initial conversion of the customer's voice to IP is performed by the customer's computer, on the customer's side of the demarcation point, not by Vonage. (SA16-17.)

[80] *Petitions for Waiver of Section 64.702 of the Commission's Rules*, 100 F.C.C.2d 1057 (1985).

[81] *Frame Relay Order*, *supra* note 77.

[82] 47 U.S.C. § 153(20).

The Commission has recognized that such computer processing functionality is characteristic of statutory information services. For example, the Commission has explained that the Internet's reliance on Domain Name Systems ("DNS") is one of the "information service" characteristics of the Internet. As the Commission has explained:

> A DNS is an Internet service that enables the translation of domain names into IP addresses. When queried about a domain name, a DNS server provides the querier with the IP address of the domain name or the IP address of another DNS server.… This translation process is necessary because routing of traffic over the Internet is based on IP addresses, not domain names. As a result, before a browser can send a packet to a website, it must obtain the address for the site.[83]

The DNS, the Commission explained, "constitutes a general purpose information processing and retrieval capability,"[84] that "encompasses the capability for 'generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications,'" and thus constitute[s] an information service, as defined in the Act."[85]

Similarly, in the recent *Pulver Order*,[86] the Commission explained that various database management and information processing functions necessary to and associated with the provision of Pulver's Free World Dial-up service warranted the classification of the service as a

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[83] *Inquiry Concerning High-Speed Access to the Internet over Cable and Other Facilities, 17 F.C.C.R. 4798*, ¶ 17, n.74 (2002) ("*Cable Modem Order*"), *vacated on other grounds*, *Brand X Internet v. FCC*, 345 F.3d 1120 (9th Cir. 2003). Although the 9th Circuit vacated the FCC's ruling, it did not undermine the FCC's rationale for classifying Internet access as an information service. Rather, it relied on its earlier decision in *AT&T Corp. v. City of Portland*, 216 F.3d 871 (9th Cir. 2000), which held that the information *transmission* provided by the cable company is distinct from the information *processing* performed by the Internet service provider. That holding has no bearing on the present case, because Vonage itself does not provide any transmission services.

[84] *Id.* ¶ 37.

[85] *Id.* ¶ 38 (quoting 47 U.S.C. § 153(20) (statutory definition of information service).

[86] *Pulver Order*, *supra* note 45.

statutory information service.[87] Pulver offers a service that, like Vonage's, facilitates voice communications between users on the Internet.[88] The Commission found that Pulver's service is an information service. Among the "computing capabilities" of the Pulver service the Commission focused on was the "stor[age] [of] member information (*e.g.*, assigned numbers)," and the "process[ing]" of that information on the Pulver server necessary to facilitate communications between users.[89] Similar functions are intrinsic to Vonage's service.

Thus, both the *Cable Modem Order* and the *Pulver Order* hold that the routing of information on the Internet necessarily involves an information processing function that renders the overall service an information service. Similar data processing and routing functions are an intrinsic part of Vonage's service. For the same reasons, Vonage's service must similarly be classified as an information service.

B. The Commission Should Not Revise Its Interpretation of the Meaning of "Telecommunications Services" and "Information Services" Under the Act

While voice-over-IP calling is relatively new, the legal framework for such services is not. In determining a new regulatory framework for IP-enabled services, it is critical that the Commission do so in a manner consistent with relevant statutory provisions and its prior precedent. Administrative agencies may revise rules and regulations in accordance with their enabling act, their internal procedures and the Administrative Procedure Act; however, agencies are not empowered to rewrite laws. A key dichotomy at the heart of federal communications law in general and this proceeding in particular is the distinction between telecommunications and

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[87] *Pulver Order*, ¶ 11.

[88] Unlike Vonage, however, Pulver's service is limited to communications on the Internet exclusively, and does not offer a link to the PSTN.

[89] *Id.* The FCC also cited the availability of voice-mail to Pulver users, which the FCC has long classified as an information service, and which Vonage also provides to its customers. *Id.*

information services. "Telecommunications services" involve the transmission of information without alteration, while "information services" involve both the manipulation and transmission of information. As their statutory definitions make clear, "information services" are provided via "telecommunications," and utilize the "telecommunications services" offered by "telecommunications carriers."[90]

Telecommunications carriers are subject to common carrier regulation under Title II of the Act.[91] Under Title II, carriers are required to provide service on just, reasonable, and nondiscriminatory rates and terms, and to comply with certain tariffing, licensing interconnection, and universal service fund contribution requirements, to name only some of the most prominent.[92] In addition, common carriers providing intrastate services may be subject to various state laws. Information services, on the other hand, are specifically exempt from federal and state common carrier regulation.

This framework assures that providers of communications applications, such as Vonage, have access to the underlying telecommunications infrastructure upon which all such applications rely. The fundamental parameters of this layered policy were set in the *Commission*'s 1980 decision in the *Computer II* proceeding.[93] The Commission sought to foster

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[90] "The term telecommunications means the transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received." 47 U.S.C. § 153(43). A "telecommunications service" is "the offering of telecommunications for a fee directly to the public …." 47 U.S.C. § 153(46). Likewise, a "'telecommunications carrier' means any provider of telecommunications services …." 47 U.S.C. § 153(44). "The term 'information service' means the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications …." 47 U.S.C. § 153(20).

[91] 47 U.S.C. §§ 201 *et seq.*

[92] *See Petition for Declaratory Ruling that AT&T's Phone-to-Phone IP Telephony Services Are Exempt from Access Charges*, WC Docket 02-361, 2004 WL 856557, ¶ 4, n.16 (rel. April 21, 2004) ("*AT&T Declaratory Order*").

[93] *Computer II*, *supra* note 21.

competition and innovation in the market for these "enhanced" data processing applications that rely on open access to common carrier telecommunications facilities, while allowing the telephone monopolies to participate in, but not exercise control over, this market. In determining the appropriate regulatory framework for VoIP services, it is critical that the Commission allow for the continued access to the facility layer of the network without imposing regulatory requirements on applications that use common carrier facilities unless market failures exist in the applications market.[94]

The Commission established a regulatory regime in which "basic services" – the underlying transport – would remain subject to Title II common carrier regulation, while "enhanced services" would be exempt from such regulation.[95] While the Commission "recognize[d] that some enhanced services may do some of the same things that regulated communications services did in the past," the Commission deemed it unnecessary to subject providers in this competitive market to common carrier regulation.[96]

The Commission focused on "protocol conversion" — the manipulation and transformation of information — as a distinguishing characteristic of enhanced services.[97] The

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[94] See *supra*, Section II.

[95] The FCC defined "basic services" as "the common carrier offering of transmission capacity for the movement of information." *Computer II*, ¶ 5. It defined unregulated "enhanced services" as "services, offered *over* common carrier transmission facilities used in interstate communications, which employ computer processing applications that act on the format, content, code, protocol or similar aspects of the subscriber's transmitted information …." 47 C.F.R. § 64.702(a) (emphasis supplied).

[96] *Computer II*, ¶ 132.

[97] Protocols are "the methods used for packaging the transmitted data in quanta, the rules for controlling the flow of information, and the format of headers and trailers surrounding the transmitted information and of separate control messages." *Computer II*, ¶ 97, n.33. *See Amendment of Section 64.702 of the Commission's Rules and Regulations* (*Second Computer Inquiry*), , 84 F.C.C.2d 50, ¶ 26 (1980) ("*Computer II Reconsideration Order*") ("protocol conversions capabilities are now being offered completely external to the basic transmission network of underlying carriers"); *Communications Protocols under Section 64.702 of the Commission's Rules and Regulations*, 95 F.C.C.2d 584, ¶ 16

Commission now asks whether it should continue to distinguish between services that perform a net protocol conversion and afford this characteristic dispositive weight when classifying services.[98] The Commission further asks whether there are any legal constraints on the Commission's authority to revise the definition of enhanced services.[99]

When Congress amended the 1934 Act in 1996, it codified the *Computer II* framework into the statute by adopting new definitions of telecommunications and information services that codified the basic-enhanced service framework.[100] Although Congress used slightly different terminology, the Commission has concluded that the categories of "telecommunications service" and "information service" contained in the 1996 Act parallel the definitions of "basic service" and "enhanced service" developed in the Commission's *Computer II* proceeding.[101] The Commission has also explained that information and telecommunications services are "mutually exclusive" categories, and that the codification of these terms manifested Congress' intent to maintain a regime in which information service providers are not subject to regulation as common carriers merely because they provide their service "via telecommunications."[102]

The Commission also has found that Congress intended to include protocol conversions within the definition of information services.[103] It reasoned that this interpretation was not only "consistent with the Commission's existing practice of treating end-to-end protocol processing services as enhanced services," but also was warranted "in light of Congress's deregulatory

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(1983) (clarifying that only "net" protocol conversions, in which information is terminated in a protocol different from the one in which it entered the network, qualify as enhanced services).

[98] *IP-Enabled Services NPRM*, ¶ 44.

[99] *Id.* ¶ 32.

[100] *Id.* ¶ 26.

[101] *Id.* ¶¶ 26-27, n.94; s*ee, e.g., Non-Accounting Safeguards Order, supra* note 74.

[102] *Non-Accounting Safeguards Order*, ¶ 103.

[103] *Id.* ¶ 104 ("protocol processing services constitute information services under the 1996 Act").

intent in enacting the 1996 Act."[104] Accordingly, the Commission previously found that Congress had incorporated the net protocol conversion test into the statutory definition of information services.[105] The Commission has offered no principled justification for reversing its interpretation. Congress has limited the Commission's discretion and the Commission may not write the net protocol conversion test out of the law.[106] Congress has already balanced the relevant policy objectives and established that services that perform a net protocol conversion are "information services" under the Act.

The Commission also is seeking comment on whether a single IP-enabled communication might comprise both an "information service" component and a "telecommunications service" component.[107] Sending information "via telecommunications" is an inherent part of the definition of an information service. Thus, the fact that an information service like Vonage's is delivered in part over the telephone network does not change its nature as an information service. As discussed above, Congress has defined information services in a manner that compels the Commission to classify IP-enabled services like Vonage's as information services under the Act. Further, the Commission has determined that services that combine information and telecommunications capabilities, termed "hybrid" services, are

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[104] *Id.; see also Federal-State Joint Board on Universal Service*, Report to Congress, 13 FCC Rcd 11501, ¶ 51 (1998) ("*Universal Service Report*") ("services offering net protocol conversion appear to fall within the statutory language, because they offer a capability for 'transforming [and] processing' information."); *AT&T Declaratory Order*, ¶¶ 6-7, 12 (clarifying that services that offer net protocol conversion are information services, but service that does *not* perform a net protocol conversion is a telecommunications service).

[105] *Id.*; *AT&T Declaratory Order*, ¶¶ 6-7.

[106] *IP-Enabled NPRM*, ¶ 44.

[107] *Id.*

themselves information services.[108] The Commission should not attempt to reverse long-standing precedent in order to segregate IP-enabled services into telecommunications and information service components. Vonage believes that attempts to so segregate services are based, at least in part, on concerns about the sustainability of the federal Universal Service Fund ("USF"). While maintaining universal service is an important public policy goal, that goal does not justify reversing decades of precedent holding that information service providers are "using" (not "providing") telecommunications. Universal service should not be the tail that wags the dog. As Chairman Powell has stated, if it determines direct contributions are necessary, the Commission has alternative means of requiring VoIP providers to make such direct contributions.[109] Vonage addresses the public policy issues associated with universal service *infra*, Section VII.

C. Important Policy Considerations Weigh in Favor of Leaving IP-Enabled Services, Including VoIP, Free from Regulation

The Commission is also seeking comments on the interrelationship between its policy goals and the statutory text in the Act.[110] As explained, *supra* Section IV.A., Congress has already weighed all the relevant factors in distinguishing between telecommunications services and information services. As such, the Commission is not empowered to rewrite the definitions

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[108] *Universal Service Report*, ¶ 58 (citing *Regulatory & Policy Problems Presented by the Interdependence of Computer and Communications Services & Facilities* ("*Computer I*"), 7 FCC 2d 11, 13 (1966) (Notice of Proposed Rulemaking); 28 FCC 291 (1970) (Tentative Decision); 28 FCC 2d 267 (1971) (Final Decision), *aff'd in part sub nom. GTE Service Corp. v. FCC*, 474 F.2d 724 (2d Cir. 1973), *decision on remand*, 40 FCC 2d 293 (1973)); *see also*, *Computer II*, ¶¶ 97-114.

[109] Written Statement of Michael K. Powell, Chairman, Federal Communications Commission, Before the Committee on Commerce, Science and Transportation, United States Senate (Oct. 30, 2003) *available at* http://commerce/senate.gov/hearings/testimony.cfm?id=980&wit_id=1943 (visited May 28, 2004). *See also*, Statement of Jeffery Citron, Vonage Holdings Corp., Before the Committee on Commerce, Science and Transportation, United States Senate (Feb. 24, 2004) *available at* http://commerce/senate.gov/hearings/testimony.cfm?id=10658&wit_id=2989 (visited May 28, 2004).

[110] *IP-Enabled NPRM*, ¶ 42.

of telecommunications and information services in order to pursue policy objectives. Accordingly, these comments address the policy issues that would arise should the Commission exercise its ancillary jurisdiction over information services under Title I of the Act.[111]

The Commission specifically references policy concerns identified by Congress, including universal service, access for the disabled, preservation of the emergency services system, and law enforcement concerns.[112] However, the Commission must not lose sight of the fact that Congress also established explicit public policy regarding the Internet in the 1996 Act. Congress determined that the Internet should remain free from regulation in Section 230 of the Act by establishing a national "hands-off-the-Internet" policy that courts and agencies at all levels of government have relied upon to advance the Act's deregulatory objectives. Specifically, Congress found that "[t]he Internet and other interactive computer services have flourished, to the benefit of all Americans, with a minimum of government regulation."[113] In order "to promote th[is] continued development," the 1996 Act reaffirmed the "policy of the United States" of maintaining the Internet "unfettered by Federal or State regulation."[114]

The Commission has viewed this Section 230 as inextricably linked to the codification of the *Computer Inquiry* framework. It has recognized that "there may be telecommunications services that can be provisioned through the Internet," but nonetheless exempted Internet service

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[111] *Id.*

[112] *Id.* Universal service and issues relating to the 911 system are separately addressed in these comments. *See infra* Sections V and VII. The Commission is considering concerns relating to the *Communications Assistance for Law Enforcement Act* in a separate proceeding and plans to initiate a rulemaking. *See United States Department of Justice, Federal Bureau of Investigation, and Drug Enforcement Administration Joint Petition for Rulemaking to Resolve Various Outstanding Issues Concerning the Implementation of the Communications Assistance for Law Enforcement Act*, RM-10865 (filed Mar. 10, 2004); *IP-Enabled NPRM*, ¶ 50, n.158.

[113] 47 U.S.C. § 230(a)(4).

[114] 47 U.S.C. § 230(b).

and application providers from common carriage regulation.[115] The Commission specifically found that the 1996 Act mandated that it continue "[l]imiting carrier regulation to those companies that provide the underlying transport," in order to "ensure[] that regulation is minimized and is targeted to markets where full competition has not emerged."[116] "We believe that Congress, by distinguishing 'telecommunications service' from 'information service,' and by stating a policy goal of preventing the Internet from being fettered by state or federal regulation, endorsed this general approach."[117]

VoIP is still in its infancy and is a dynamic technology. VoIP is a rapidly evolving and emerging technology that is used in providing a variety of services. As such, Vonage cautions the Commission not to attempt to squeeze services that use VoIP into existing telecommunications regulatory models even if the service is considered a "hybrid" service under Commission precedent. Whether VoIP will succeed as a technology or whether it will gain significant market share is still an open question. Premature regulation of a fledgling technology will certainly inhibit its growth and threaten the viability of the technology as a potential competitor to traditional providers of telephone service. Further, the Commission should bear in mind that VoIP is a technology, not a service, and can be used in delivering a variety of different products to customers. Therefore, it is important to analyze the specific VoIP deployment prior to determining whether regulation is appropriate.

Some companies limit their implementation of VoIP technology to the transport of traffic in such a manner that end-users would not even be aware that the telephone calls they receive are

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[115] *Universal Service Report*, ¶ 101.

[116] *Id.* ¶ 95.

[117] *Id.*

routed using the Internet's packet-switched network. Other companies, like Vonage, have developed information services and products that allow their customers to send and receive asynchronous digital IP data packets over the Internet, and provide conversion services to allow these packetized communications to interface with the analog and synchronous digital protocols of the PSTN.[118]

Companies like Vonage provide retail consumers with an information service that possesses features and capabilities that are not offered by traditional providers of telephone service. Failure to be cognizant of the important differences between the circuit- and packet-switched network will inevitably result in hamstringing VoIP's development and deployment. Vonage provides an innovative and unique information service to its users. Due to the high quality of service provided by Vonage, coupled with features that are not provided by other companies, Vonage's application helps to promote the continued deployment of broadband services throughout the Nation, since a broadband connection to the Internet is a prerequisite to receiving service from Vonage. While Vonage and other VoIP services still comprise a fractional share of the overall marketplace for communications services,[119] consumers are excited about the unique possibilities that Vonage's service offers, and appreciate Vonage's commitment to its customers. The Commission should ensure that information services like Vonage continue to thrive and should either act or refrain from acting in a manner that encourages the continued deployment of a nascent technology with immense potential.

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[118] *Vonage Petition*, *supra* note 1, at 5-7.

[119] The FCC reported that, as of June 30, 2003, there were 182.8 million wireline access lines and 147.6 million wireless lines in the United States. *See* Industry Analysis and Technology Division, Wireline Competition Bureau, *Local Telephone Competition: Status as of June 30, 2003* (rel. Dec. 22, 2003), *available at* http://www.fcc.gov/wcb/iatd/comp.html (visited May 26, 2004). On the other hand, it is estimated that there are only 200,000 to 300,000 "active" VoIP subscribers in the United States. *See* Time to Redial: VoIP (Voice Over Internet Protocol) Makes a Comeback, Knowledge@Wharton, (Jan. 28, 2004) available at http://www.knowledge.upen.edu (visited May 28, 2004).

V. 911/E911 AND CRITICAL INFRASTRUCTURE DEPLOYMENT IN IP-ENABLED SERVICES[120]

There is no question that important policy questions have arisen in the context of VoIP services.[121] Vonage understands that it is in the public interest to provide customers access to emergency services, and believes that the continued development of these services is an important national priority. In this regard, Vonage was the first non-geographically-fixed VoIP provider to offer a 911 dialing solution.[122] It is equally clear that robust, competitive VoIP providers will strive to offer the best 911 service possible to respond to competitive market forces. Unlike the traditional wireline telephony market in the United States, VoIP providers work within a competitive market which demands such services. As such, the need for VoIP 911/E911 regulation may be partially or wholly abrogated.

Should the Commission determine that regulation is required, the plain language of the 1996 Act makes clear that the Commission has the primary obligation to oversee the development and deployment of universal emergency telephone services.[123] The Commission's primary role in setting 911/E911 policy is also reflected in recent activity in the Commission's 911 docket. In 2002, the Commission solicited comments on the applicability of 911 to VoIP services.[124] Through this rulemaking, the Commission should assert exclusive federal

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[120] *IP-Enabled NPRM*, ¶¶ 51-57.

[121] *Id.*

[122] Vonage's 911 dialing solution differs in many important ways from that provided by wireline providers. *See infra* Section V B. For additional information about Vonage's emergency dialing service, see <www.vonage.com>.

[123] *See* 47 U.S.C. § 251(e)(3) ("The Commission and any agency or entity to which the Commission has delegated authority under this subsection shall designate 9-1-1 as the universal emergency telephone number within the United States for reporting an emergency to appropriate authorities and requesting assistance.").

[124] *See Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, Further Notice of Proposed Rulemaking, 17 FCC Rcd 25576, ¶ 113 (2002) ("*2002 E911*

jurisdiction over the provision of 911 and E911 services via VoIP. VoIP is an inherently interstate service,[125] and as such should not be subject to individual state regulation on 911/E911 or other matters. Allowing states to develop independent regulations concerning the provisioning of 911/E911, a service that is strategically important to the safety and security of the citizens of this country, will only serve to delay the development and deployment of a single, unified, reliable 911/E911 VoIP system.

Vonage also requests that VoIP service providers be afforded flexibility and time to address 911/E911 issues including funding, technical solutions, and deployment. Moreover, the Commission should allow the VoIP industry the opportunity to develop industry standards to effectuate 911/E911 service. Allowing the industry this time and flexibility will ensure that the system developed is the best one possible and most viable for long-term changes of the Nation's network infrastructure.

A. Current Technological Limits and Capabilities of VoIP 911/E911 Services

As requested by the Commission, Vonage submits the following information on the current state of 911/E911 in the VoIP industry.[126] Vonage agrees that "development and deployment of these services is in its early stages, that these services are fast-changing and likely to evolve in ways that we cannot anticipate, and that imposition of regulatory mandates, particularly those that impose technical mandates, should be undertaken with caution."[127] Against this backdrop, Vonage believes that the natural development and deployment of IP-enabled services will lead to technological improvements and cost savings, which will eventually

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NPRM"). The subsequent *2003 E911 Order*, 18 FCC Rcd 25340 (2003), did not impose 911 or E911 regulation on VoIP providers.

[125] *See supra* Section III A.

[126] *IP-Enabled NPRM*, ¶ 53.

[127] *Id.*

lead to 911/E911 services that are more reliable and provide more information to emergency responders. The Commission need not regulate this goal into existence, it is already coming.

The Commission should also remember that the existing 911/E911 network is extremely antiquated. As noted in the *Hatfield Report*, "the existing E911 wireline infrastructure is built upon not only an outdated technology, but one that was originally designed for an entirely different purpose."[128] VoIP services and other new technologies are constrained in their ability to provide 911/E911 services due to the limitation of the infrastructure itself. VoIP services promise to greatly enhance the delivery of emergency services, but the requisite upgrades to the 911/E911 infrastructure will require the efforts of many different industry participants.

B. Vonage's 911 Service

To date, Vonage and other VoIP service providers have been unable to provide "traditional" 911 or E911 service. This is caused by both technology and legal constraints. In order to provide its customers with access to emergency service providers, Vonage has arranged to provide certain emergency calling services, accessible by dialing the familiar digits "911." However, Vonage's 911 service is not the same as that offered by traditional wireline telephone companies, that have had approximately forty years to develop and deploy their service.[129] However, with additional development, VoIP 911 services promise to be far superior to the services offered by many telecommunications carriers today.

First, Vonage is currently unable to determine with certainty the geographic location of a caller because a Vonage customer can move their service to any location where a broadband

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[128] Dale N. Hatfield, *A Report on Technical and Operational Issues Impacting the Provision of Wireless Enhanced E911 Services*, WT Docket No. 02-46, Public Notice, DA 02-2666, at ii (rel. Oct. 16, 2002).

[129] *IP-Enabled NPRM*, ¶ 51 (noting that 911 service has been in existence for wireline customers since 1965).

Internet connection is available simply by plugging their MTA into a router or Ethernet port. This mobility makes it impossible for Vonage to be sure that 911 calls are routed to the appropriate PSAP. This limitation is similar to that faced by wireless carriers; however, Vonage clearly discloses this limitation to its customers. Vonage customers must register their geographic location with the company before they can use 911 dialing. This allows Vonage to have their calls routed by an unaffiliated telecommunications carrier to the PSAP serving the customer's registered location. However, if a customer travels to a different location and forgets to update their registration, their 911 call may be routed to the wrong PSAP. Vonage encourages all its customers to activate 911 dialing and does not charge any fees for providing this feature to its customers. Vonage requires its customers to affirmatively acknowledge the E911/911 limitations associated with its service as compared to that provided by wireline telephony providers. Specifically, throughout the activation process, the customer is made aware of the limitations associated with Vonage's emergency dialing service and the computing device that customers must use to make use of Vonage's service also contains an insert that again notifies the customer of the emergency dialing limitations.

Vonage is actively working to resolve the location issue associated with VoIP service. Vonage is currently working on trials in Florida, Minnesota, Texas, Vermont and Washington. Vonage is attempting to resolve various technical issues associated with using native IP communications in a legacy 911/E911 system.

Second, while Vonage is technically able to provide E911 call-back and location information (given the constraints discussed above), legal constraints have impeded the Company's ability to effectively provide such service. Because Vonage is an information service provider, not a telecommunications carrier, it has not been able to have customer

communications routed directly to the E911 trunks operated by incumbent local exchange carriers ("ILECs"). Section 251(c)(1) of the 1996 Act requires ILECs to provide interconnection to these trunks to other telecommunications carriers. The Act does not, however, require ILECs to provide such interconnection to information service providers. As such, Vonage has been unable to directly interconnect to ILEC E911 trunks due to the absence of a specific legal duty that requires ILECs to offer such interconnection. The company has been working to obtain indirect access to the E911 network through competitive LECs, and is continuing these efforts to improve its 911 dialing service. As an interim solution to this problem, Vonage has adopted a system to route its customer's calls over conventional PSTN lines to the administrative telephone numbers of the PSAPs. Vonage understands that other 911 emergency calls, including Telecommunications Relay Service ("TRS"), telematics, and some mobile carrier calls, are also routed to the PSAPs' administrative numbers.[130]

C. 911/E911 Regulation and VoIP Services

In the *IP-Enabled NPRM*, the Commission requested comments on whether particular entities should be subject to some form of 911/E911 regulation under four delineated criteria.[131] While these criteria serve the Commission well in the context of traditional telecommunications carriers, Vonage believes that 911/E911 regulation and infrastructure in the United States needs holistic reform. The Commission should make a fundamental decision to move the current emergency access system forward. As the Commission recognizes, there is a real danger that in forcing new technologies to fit into an old architecture and asymmetric regulations, the future

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[130] The National Emergency Number Association, *NENA and VoIP Leaders Forge Agreement to Provide Access to Emergency Service for VoIP Users*, Agreement Point 1 (Dec. 1, 2003) *available at* www.nena.org (visited May 25, 2004).

[131] *IP-Enabled NPRM*, ¶ 55.

public safety benefits that VoIP technology promises could be impeded or even extinguished.[132] As such, Vonage advocates the creation of an IP-based emergency access system that would allow IP communications to interconnect directly to the appropriate PSAP. This system need not replace the 911/E911 systems currently in existence. However, the advent and growth of the Internet and IP-enabled services will eventually require a unified, federal system by which customers utilizing IP-enabled services can access emergency services at any time from any location. This cannot be ignored. The technological differences between VoIP and traditional telephony are such that the Commission should develop a new framework for IP-enabled services by moving towards the future, rather than clinging on to the past.

D. VoIP Industry Development of 911/E911 Services

The VoIP industry has been actively engaged in creating solutions for the development and deployment of 911/E911 service, and should be allowed to continue to do so. As noted above, competitive VoIP providers have a market incentive to provide 911/E911 services to their customers. Although VoIP is still an infant industry, it is taking extraordinary steps to ensure that customers have access to emergency service features. The National Emergency Number Association ("NENA") is currently engaged in developing standards that will allow for universal provisioning of services similar to wireline E911.[133] As noted by the Commission, several VoIP companies, including Vonage, have reached agreement with NENA regarding their intention to

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[132] *Id.* ¶ 57.

[133] The National Emergency Number Association, *E9-1-1, Internet Protocol & Emergency Communications: National Emergency Number Association Issues a Call for Action: Blueprint Needed for Internet Protocol, Voice over Internet Protocol and E9-1-1*, Press Release (Mar. 22, 2004) *available at* www.nena.org (visited May 25, 2004).

provide 911 services.[134] Similarly, the Alliance for Telecommunications Industry Solutions ("ATIS") is holding forums and workshops devoted to VoIP 911 standards.[135]

The Commission should afford the VoIP industry flexibility in developing 911/E911 standards for VoIP service. Considering the current technical limitations faced by VoIP service providers (discussed *infra*), the Commission should not seek to impose standards on VoIP that the industry is currently unable to meet. Allowing the VoIP industry additional time to develop emergency access standards will eventually lead to a robust VoIP 911/E911 system that will likely be contain additional features that legacy telephone service providers are unwilling or unable to provide.

On March 18, 2004, the Commission's Internet Policy Working Group ("IPWG") held a "Solutions Summit" at which a discussion was held between agency officials and industry leaders over 911/E911 issues. Specifically, attendees discussed the challenge of the provision of 911/E911 access to VoIP users. Many panelists noted that IP networks will eventually allow more robust features than current E911 systems, but these features will take time to develop. In the meantime, several participants suggested that the Commission should step in to make sure that VoIP providers get access to information and databases necessary to implement E911 service. Vonage and other industry leaders participated in this forum, and intend to do so in the future. Vonage believes that industry cooperation, rather than strict government regulation, will best promote the important national 911/E911 goals, while providing the VoIP industry a

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[134] *IP-Enabled NPRM*, ¶ 56. *See also*, The National Emergency Number Association, *Public Safety and Internet Leaders Connect on 9-1-1*, Press Release (Dec. 1, 2003) *available at* www.nena.org (visited May 25, 2004).

[135] ATIS, *ATIS Webinar: VoIP and E911 Critical Implementation Issues*, Press Release (Feb. 11, 2004) *available at* http://www.atis.org/PRESS/pressreleases2004/021104.htm (visited May 25, 2004).

platform it can use to continue to develop and deploy 911/E911 services demanded by consumers.

E. The Commission Should Develop a Phased Approach Similar to Wireless E911

As noted by the Commission in the NPRM, "[e]fforts by federal, state, and local government, along with the significant efforts by wireline and wireless service providers, have resulted in the nearly ubiquitous deployment of 911 service."[136] While traditional wireline telephone service has had basic 911 service for the better part of four decades, the wireless telephone industry has only had a requirement to provide 911 services since 1996. This delay in implementing wireless 911 service allowed the wireless industry time to develop systems and the infrastructure capable of handling such service. In fact, the phased approach instituted by the Commission in 1996 for the provision of E911 is still in effect. Wireless telephony service providers are not expected to have E911 service universally in place until late 2005, almost a full ten years from when the Commission began the process.

The VoIP industry should be given time to develop and deploy 911/E911 services in a manner determined by competitive market forces. As noted by the Commission in the *IP-Enabled NPRM*, the wireless E911 implementation is still underway.[137] This deliberate approach has lessened the regulatory impact on the wireless industry, and allowed it to develop the systems and infrastructure to handle E911 service. This has led to decreased volatility in the industry, and has ensured that when fully deployed, the wireless E911 system will be universal and reliable. On if the competitive marketplace fails to provide a viable E911 solution, then Vonage requests that the Commission take a similar approach with the VoIP industry as it did with wireless carriers. Allowing the industry time to develop and deploy 911/E911 services will

[136] *IP-Enabled NPRM*, ¶ 51.

[137] *Id.* ¶ 52.

lessen the costs on the industry and consumers for this service, and will eventually lead to a system with more features, lower costs, and fewer technical problems.

VI. THE COMMISSION SHOULD REFORM THE INTERCARRIER COMPENSATION SYSTEM PRIOR TO APPLYING IT TO VOIP SERVICES[138]

The Commission is seeking comment on the extent to which access charges should apply to VoIP and other IP-enabled services.[139] The existing intercarrier system is broken and in dire need of reform. Rather than apply an anachronistic, irrational access charge system to innovative IP-enabled services, the existing access charge system should first be reformed. The intercarrier compensation scheme is irrational in part because traffic exchanged between the same two geographic end points is not subject to similar compensation obligations. Different compensation mechanisms apply depending on the type of carrier handling the traffic and can vary further depending on the characterization of the traffic by the carriers. Despite the fact that the charges are assessed on what is, at base, the same functionality – originating, transporting, and terminating communications destined either to or from the network of another carrier – the existing intercarrier compensation scheme assesses charges inequitably.

IP networks do not track the geographic endpoints of IP communications. The nexus of geography and the communications service is at the center of the existing access charge system. When applied to traditional, circuit-switched communications, telephone numbers serve as a proxy for the known physical locations of the caller and the called party. IP-enabled services do not allow carriers to make geographic assumptions based on telephone numbers. As the Commission explained in the *Pulver Order*, the physical location of users of the Free World Dialup service can continually change. The same is true for users of Vonage's IP-enabled

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[138] *Id.* ¶¶ 61-66.

[139] *Id.* ¶ 61.

service and of other IP-enabled services—for example, both Level 3 and SBC Communications have petitions pending with the Commission where these companies describe the non-geographic nature of IP-enabled services.[140] So long as the Vonage customer has access to a broadband Internet connection and their multimedia terminal adapter, a Vonage customer is able to place and receive calls from any location using a single telephone number. Vonage's service, as well as other IP-enabled services, disassociate geographically-assigned telephone numbers from the fixed geographic point associated with the PSTN number assignment. As technology evolves and high-speed Internet access becomes ubiquitous, which is an explicit goal of the President and the Commission, Vonage will also empower customers to choose the IP-enabled device that originates or terminates communications, further expanding its customers' mobility.

The same limitations associated with traditional end-to-end analysis described by the Commission in the *Pulver Order* applies equally to Vonage's IP-enabled service and to other IP-enabled services such as those described in the Level 3 Petition. The IP endpoints of an IP-enabled service are known only to the end user of the IP-enabled service. Were such systems ever developed to track these IP endpoints—an unlikely prospect—any attempt to segregate IP-enabled communications into interstate and intrastate components "would involve the installation of systems that are unrelated to providing [the] service to end users."[141] Such systems would impose compliance costs on Vonage and IP-enabled service providers that "would be designed simply to comply with legacy distinctions between federal and state jurisdictions[,]"[142] that "do

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[140] *Petition of SBC Communications Inc. For Forbearance from the Application of Title II Common Carrier Regulation to IP Platform Services*, Docket No. 04-29 (filed 2/5/04); *Level 3 Communications LLC's Petition for Forbearance Under 47 U.S.C. § 160(c) from Enforcement of Section 251(g), Rule 51.701(b)(1), and Rule 69.5(b)*, Docket No. 03-266 (filed Dec. 23, 2003).

[141] *Pulver Order*, *supra* note 45, ¶ 24.

[142] *Id.* ¶ 24.

not appear to serve any legitimate policy purpose" and "would improve neither service nor efficiency."[143] Accordingly, it makes no economic sense to devote resources to developing a useless and inefficient functionality. The Commission should first reform the access charge system and then apply a rational compensation system equally to all users of the PSTN.

VII. NON-FACILITIES-BASED VOIP PROVIDERS CONTRIBUTE TO THE UNIVERSAL SERVICE FUND[144]

As the Commission highlights in the *IP-enabled NPRM*, universal service remains an important social policy goal.[145] The Commission seeks comment on a myriad of issues relating to universal service, including whether the Universal Service Fund ("USF") should be broadened to include facilities-based and non-facilities-based providers of IP-enabled services.[146] The Commission is also seeking comment on what the magnitude of the impact would be on the USF if VoIP services are found to be information services and therefore not required to contribute to the USF.[147] Prior to specifically responding to the Commission's questions, Vonage would like to correct the record in terms of how VoIP providers contribute to the USF.

Non-facilities-based VoIP providers already indirectly contribute to the USF. To offer VoIP services, providers use and incorporate telecommunications in their information service. Non-facilities-based VoIP providers purchase telecommunications services from telecommunications carriers. In this regard, non-facilities-based VoIP services are no different than many non-facilities-based enhanced services, such as Internet access services offered by

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[143] *Id.*

[144] *IP-Enabled NPRM*, ¶¶ 63-66.

[145] *Id.* ¶¶ 42, 63-66.

[146] *Id.* ¶ 63.

[147] *Id.* ¶ 64.

traditional Internet service providers, that require significant quantities of telecommunications services in order to provide the application.

Because non-facilities-based VoIP providers do not contribute directly to the USF, the carrier providing telecommunications services to the VoIP provider must report those revenues as end-user sales. As such, these carriers typically assess USF on these sales, charging the non-facilities-based VoIP provider a USF pass-through amount. As a result, while it is technically correct that non-facilities-based VoIP providers are not direct contributors to the USF, the products and services purchased by these VoIP providers *are* assessed USF. Like any other non-facilities-based enhanced service provider, non-facilities-based VoIP providers are not *direct* contributors to USF. Therefore, the Commission's inquiry should not focus on *whether* non-facilities-based VoIP providers should contribute to USF (they do); instead, the Commission should ask *how* such VoIP service providers should contribute.

The Commission requests comments on whether the advent of IP-enabled services results in favoring a specific reform methodology that is the subject of the Universal Service Contribution Methodology proceeding.[148] Vonage believes that retail VoIP providers would be largely unaffected by adoption of most of the proposals currently under consideration. As previously noted, retail VoIP providers are end-users for USF purposes and, thus, contribute to USF on the telecommunications services purchased for use in their VoIP product. If the methodology were to change to a connection-based collection, VoIP providers would pay the

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[148] *Federal-State Joint Board on Universal Service, 1998 Biennial Regulatory Review - Streamlined Contributor Reporting Requirements Associated with Administration of Telecommunications Relay Service, North American Numbering Plan, Local Number Portability, and Universal Service Support Mechanisms, Telecommunications Services for Individuals with Hearing and Speech Disabilities, and the Americans with Disabilities Act of 1990, Administration of the North American Numbering Plan and North American Numbering Plan Cost Recovery Contribution Factor and Fund Size, Number Resource Optimization, Telephone Number Portability, Truth-in-Billing and Billing Format*, CC Docket Nos. 96-45, 98-171, 90-571, 92-237, 99-200, 95-116, 98-170, Report and Order and Second Further Notice of Proposed Rulemaking, 17 FCC Rcd 24952 (2002).

underlying carrier a USF amount based on the number of circuits purchased. Regardless of the system employed, therefore, VoIP contributions would remain relatively consistent, as they are merely a reflection of the underlying telecommunications services purchased by VoIP providers.

Based on a snapshot of its telecommunications purchases, Vonage has determined that switching the contribution methodology from a revenue-based system to one based on connections or other similar unit-based contribution would create only marginal differences in Vonage's contribution and would have no material impact on the Fund. As a result, any change in the current methodology from a revenue-based methodology to a connection-based framework or other alternative method should not substantially alter the magnitude of the USF payments made by retail VoIP providers that purchase underlying telecommunications services from other contributors.[149]

The Commission is also seeking comment on which entity (the VoIP company or the carrier) is providing telecommunications service if certain VoIP providers are found to be information services.[150] The Commission seeks further comment on whether the Commission should find specific services subject to USF contribution, how VoIP providers would identify the portion subject to such contribution, and how to determine the entity that is providing telecommunications services.[151] As detailed above, a VoIP provider like Vonage currently purchases telecommunications services as an end user. Non-facilities-based VoIP providers do not "provide" telecommunications services, rather they use telecommunications services as an

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[149] Vonage acknowledges that some providers of IP-enabled services self-provide the "telecommunications" that are used in the provision of their information services and therefore do not contribute to USF indirectly or directly.

[150] *IP-Enabled NPRM* ¶ 64.

[151] *Id.*

input in the information service they sell to customers.[152] The 1996 Act codified the Commission's historical distinction between enhanced and basic services.[153] Since Congress has made the Commission's distinction between enhanced and basic services part of the statutory framework of the 1996 Act, the Commission cannot classify a service that meets the definition of an information service under the Act as a telecommunications service for purposes of USF contribution. A non-facilities-based VoIP provider no more provides a telecommunications service than America Online. In each case, a telecommunications service is one component used to provide an information service.

While VoIP providers do not contribute directly to the Fund, it is not at all clear that the distinction between direct and indirect contribution has any bearing on the decreases in revenue that have occurred in the USF contribution base.[154] Instead, it is because traditional telephony products have been declining in price, and have been increasingly bundled with other services (both information and telecommunications) that are not contribution eligible, that the Fund has seen the decline in its contribution base.

It is not clear that VoIP providers' lack of direct contribution is the major cause or even a significant factor of a decline in revenues to the USF.[155] Rather, it is more likely that the current system does not account properly for the current realities in the industry, including bundled services that include distance-insensitive telecommunications pricing, often paired with enhanced or information services. Moreover, under the current statute, contribution to the USF

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[152] *Id.*

[153] *See* 47 U.S.C. § 3(20), (46).

[154] Total industry revenues for telecommunications services provided to end-users in 2002 were about $232 billion, compared to about $236 billion in 2001. *Federal-State Joint Board on Universal Service Staff Releases Monitoring Report*, Press Release (rel. Dec. 22, 2003) available at www.fcc.gov/Daily_Releases/Daily_Digest/2003/dd031222.html (visited May 25, 2004).

[155] *IP-Enabled NPRM*, ¶ 64.

is tied to interstate telecommunications. The Act prohibits the Commission from assessing USF on intrastate revenue[156] and Commission rules limit collection from exclusively international carriers.[157]

The Commission also asks whether it can or should assess USF on new services, including self-provided private carriage and certain broadband or enhanced services.[158] Section 254 of the Act may allow so-called "permissive contribution" to the USF by other providers of telecommunications,[159] but to assess USF on information services that use telecommunications services provided by contributing carriers would be of little or no net benefit to Fund collections. Because these information service providers purchase telecommunications service and use these services to provide their enhanced services, assessing USF directly on this class of information service providers would not materially increase the existing Fund collections based on services that are already reported as end-user telecommunications and subject to USF contribution. Thus, collecting directly from non-facilities-based VoIP providers such as Vonage would likely result only in the most marginal of benefits to the system.

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[156] 47 U.S.C. § 254 (d); *Texas Office of Public Utility Counsel v. FCC,* 183 F.3d 393 (5th Cir. 1999).

[157] 47 C.F.R. § 54.706 (c).

[158] *IP Services NPRM*, ¶ 64; *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable And Timely Fashion, and Possible Steps To Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, Third Report, CC Docket No. 98-146 (rel. Feb. 6, 2002).

[159] 47 U.S.C. § 254 (d).

VIII. CONCLUSION

Vonage recommends that the Commission first apply the statutory definitions to determine whether specific IP-enabled services are subject to Title II or Title I regulation. In adopting a new regulatory structure to examine IP-enabled services, the Commission must be careful not to abandon the dictates of the Communications Act. Traditional distinctions made between telecommunications and information services should not be abandoned. No matter what the policy goal is that the Commission is attempting to achieve, distorting the definition of telecommunications and information services would be inconsistent with Congress's intent.

The Commission should next adopt a layered approach to determine the appropriate level of regulation for IP-enabled services and the facilities on which such services rely. Approaching regulation in this manner is the most rational and practical methodology. Vonage believes that its IP-enabled services are subject to the exclusive jurisdiction of the Commission. The Internet is a *global* network that cannot be broken into intrastate and interstate components. Fracturing the IP-enabled services into artificially segregated interstate and intrastate services will simply frustrate their development and discourage investment in broadband facilities.

Vonage agrees that certain social policy goals must be preserved as voice applications migrate to the Internet. Emergency services, access for people with disabilities, universal service and issues relating to law enforcement must all be evaluated and regulations designed to further these goals must be adapted to a new marketplace. Prior to adopting regulations, however, the Commission should wait to see if the marketplace is able to deliver these social goods without heavy-handed regulation.

Vonage urges the Commission to reform programs and systems that have become unworkable even in the existing environment. For example, the Commission should not simply superimpose the current intercarrier compensation regime on IP-enabled service providers. The

system must first be reformed. Further, the Commission must examine the universal service program and address the structural flaws associated with this program. IP-enabled services present the Commission with a unique opportunity to reform policies that simply have no analogue in a digital world.

Respectfully submitted,

/s/
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